

***Amendments to the Claims:***

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A peri-arterial blood flow booster apparatus, ~~for improving blood pressure and flow, to be implanted around a blood vessel of a patient, the booster comprising:~~

a pressure-applying device comprising

a restrainer envelope having an upstream end and a downstream end,  
and an interior surface defining an interior; and

at least one balloon disposed in the interior of the restrainer envelope  
for placing alongside a portion of a blood vessel, having two or more portions  
comprising an upstream portion disposed in the interior of the upstream end  
of the restrainer envelope and a downstream portion disposed in the interior  
of the downstream end of the restrainer envelope downstream of the  
upstream portion placed alongside a portion of the blood vessel, and

a protrusion fixedly disposed on the interior surface of the restrainer  
envelope at the upstream end, and in communication with the upstream  
portion of the at least one balloon when the upstream portion is inflated a  
~~restrainer for restraining the balloon and providing counter forces; and~~

a control console comprising[[:]]

an inflating unit for rapidly inflating and deflating the at least one

balloon, the inflating unit being connected to the at least one balloon<sub>1</sub>[[;]]

sensing means for sensing electrocardiograph signals of a the patient<sub>1</sub>[[;]] and

a control unit for controlling the ~~operation of the~~ inflating unit in correlation with the electrocardiograph signals detected by the sensing means;

~~whereby when the balloon is inflated the restrainer forces it to compress the portion of the blood vessel, preventing backflow and exerting forces on the blood vessel, forcing blood within the portion of the blood vessel to flow antegradely~~

wherein the peri-arterial blood flow booster apparatus is configured sufficient such that upon actuation, inflation of the upstream portion of the at least one balloon occurs prior to inflation of the downstream portion thereby preventing blood backflow, and upon inflation of the downstream portion blood is forced to flow downstream.

2. (Currently Amended) The apparatus of claim 1, wherein the restrainer envelope is ~~in the form of~~ a sleeve.

3. (Cancelled)

4. (Currently Amended) The apparatus of claim [[3]]1, wherein the protrusion is ~~in the form of~~ an annular protrusion.

5. (Currently amended) The apparatus of claim 1, wherein the upstream portion and the downstream portion of the at least one balloon are in fluid communication ~~comprises at least two inflatable compartments.~~

6. (Currently Amended) The apparatus of claim ~~[[5]]~~1, wherein the upstream portion and the downstream portion of the at least one balloon ~~said at least two inflatable compartments~~ are independently inflatable.

7. (Currently Amended) The apparatus of claim 1, wherein the sensing means ~~[[is]]~~ further comprises means ~~provided~~ for sensing blood pressure.

8. (Currently amended) The apparatus of claim 1, wherein the control console is implantable within the patient's body.

9. (Currently Amended) The apparatus of claim 1, wherein the control console is configured sufficiently small in size so as to be portable ~~small enough to be carried by the~~ patient.

10. (Currently Amended) The apparatus of claim 9, wherein the control console is adapted configured sufficient to be attached to a belt to be worn by the a patient.

11. (Currently Amended) The apparatus of claim 1, further comprising ~~provided with~~ a sheath provided over the at least one balloon.

12. (Currently Amended) A method for improving blood flow and pressure through an occluded blood vessel of a patient, ~~said method comprising the steps of:~~

providing a pressure-applying device comprising

a restrainer envelope having an upstream end and a downstream end,  
and an interior surface defining an interior;

at least one balloon disposed in the interior of the restrainer envelope  
for placing alongside a portion of a blood vessel, having two or more portions  
comprising an upstream portion disposed in the interior of the upstream end  
of the restrainer envelope and a downstream portion disposed in the interior  
of the downstream end of the restrainer envelope downstream of the  
upstream portion placed alongside a portion of the blood vessel, and

a protrusion fixedly disposed on the interior surface of the restrainer  
envelope at the upstream end, and in communication with the upstream  
portion of the at least one balloon when the upstream portion is inflated a  
restrainer for restraining the balloon and providing counter forces; and

affixing the pressure-applying device to a portion of a peripheral blood vessel of the  
patient;

providing a control console comprising[[:]]

an inflating unit for rapidly inflating and deflating the at least one

balloon, the inflating unit being connected to the balloon,[[;]]

sensing means for sensing electrocardiograph signals of a the patient,[[;]] and

a control unit for controlling the ~~operation of the~~ inflating unit in correlation with the electrocardiograph signals detected by the sensing means;

sensing the electrocardiograph signals of the patient; and

inflating and deflating the said at least one balloon at a predetermined rate, in correlation with the electrocardiograph signals, ~~so as to prevent backflow and compress the portion of the blood vessel in order to force blood within said portion to advance antegradely~~ such that inflation of the upstream portion of the at least one balloon occurs prior to inflation of the downstream portion thereby preventing blood backflow, and inflation of the downstream portion forces blood to flow downstream.

13. (Currently Amended) The method of claim 12, wherein the restrainer envelope is ~~in the form of~~ a sleeve.

14. (Cancelled)

15. (Currently Amended) The method of claim 12 ~~[[14]]~~, wherein the protrusion is ~~in the form of~~ an annular protrusion.

16. (Currently amended) The method of claim 12, wherein the upstream portion and the downstream portion of the at least one balloon are in fluid communication ~~comprises at least two inflatable compartments.~~

17. (Currently amended) The method of claim ~~[[16]]~~12, wherein the upstream portion and the downstream portion of the at least one balloon ~~the two inflatable compartments~~ are independently inflatable.

18. (Currently Amended) The method of claim 12, wherein the sensing means ~~[[is]]~~ further comprises means provided for sensing blood pressure.

19. (Original) The method of claim 12, further comprising implanting the control console within the patient's body.

20. (Currently Amended) The method of claim 12, wherein the control console is configured sufficiently small in size so as to be portable ~~small enough to be carried by the patient.~~

21. (Currently amended) The method of claim 20, wherein the control console is adapted configured sufficient to be attached to a belt to be worn by the patient.

22. (Original) The method of claim 12, wherein the blood vessel is an artery.
23. (Original) The method of claim 22, wherein the artery is an iliac artery.
24. (Original) The method of claim 23, wherein both of the patient's iliac arteries are treated.
25. (Original) The method of claim 22, wherein the artery is in the Descending Aorta in the chest of the patient.
26. (Currently Amended) The method of claim 22, further comprising providing a sheath covering the at least one balloon, the said sheath being placed between the blood vessel and the at least one balloon ~~to secure the balloon in place and provide an efficient facilitator for balloon replacement.~~
- 27-28. (Cancelled)

29. (New) A peri-arterial blood flow booster apparatus, comprising:

a restrainer envelope having an upstream end and a downstream end, and an interior surface defining an interior;

at least one balloon disposed in the interior of the restrainer envelope for placing alongside a portion of a blood vessel and having two or more portions comprising an upstream portion disposed in the interior of the upstream end of the restrainer envelope and a downstream portion disposed in the interior of the downstream end of the restrainer envelope downstream of the upstream portion; and

a protrusion fixedly disposed on the interior surface of the restrainer envelope at the upstream end, and in communication with the upstream portion of the at least one balloon when the upstream portion is inflated,

wherein the peri-arterial blood flow booster apparatus is configured sufficient such that upon actuation, inflation of the upstream portion of the at least one balloon occurs prior to inflation of the downstream portion thereby preventing blood backflow, and upon inflation of the downstream portion blood is forced to flow downstream.

32. (New) The peri-arterial blood flow booster apparatus of claim 29, wherein the protrusion is an annular protrusion.

33. (New) The peri-arterial blood flow booster apparatus of claim 31, wherein the upstream portion and the downstream portion of the at least one balloon are in fluid communication.



34. (New) The peri-arterial blood flow booster apparatus of claim 31, wherein the upstream portion and the downstream portion of the at least one balloon are independently inflatable.

35. (New) A peri-arterial blood flow booster apparatus, comprising:

a restrainer envelope having an upstream end and a downstream end, and an interior surface defining an interior;

two or more balloons disposed in the interior of the restrainer envelope for placing alongside a portion of a blood vessel, comprising an upstream balloon disposed in the interior of the upstream end of the restrainer envelope and a downstream balloon disposed in the interior of the downstream end of the restrainer envelope downstream of the upstream balloon; and

a protrusion fixedly disposed on the interior surface of the restrainer envelope at the upstream end, and in communication with the upstream balloon when the upstream balloon is inflated,

wherein the peri-arterial blood flow booster apparatus is configured sufficient such that upon actuation, inflation of the upstream balloon occurs prior to inflation of the downstream balloon thereby preventing blood backflow, and upon inflation of the downstream balloon blood is forced to flow downstream.

36. (New) The peri-arterial blood flow booster apparatus of claim 35, wherein the protrusion is an annular protrusion.

37. (New) The peri-arterial blood flow booster apparatus of claim 35, wherein the upstream balloon and the downstream balloon are in fluid communication.

38. (New) The peri-arterial blood flow booster apparatus of claim 35, wherein the upstream balloon and the downstream balloon are independently inflatable.

39. (New) A peri-arterial blood flow booster apparatus, comprising:

    a restrainer envelope having an upstream end and a downstream end, and an interior surface defining an interior;

    at least one balloon disposed in the interior of the restrainer envelope for placing alongside a portion of a blood vessel and having two or more portions comprising an upstream portion disposed in the interior of the upstream end of the restrainer envelope and a downstream portion disposed in the interior of the downstream end of the restrainer envelope downstream of the upstream portion; and

    a protrusion fixedly disposed on the interior surface of the restrainer envelope at the upstream end, and in communication with the upstream portion of the at least one balloon when the upstream portion is inflated.

40. (New) The peri-arterial blood flow booster apparatus of claim 39, wherein the protrusion is an annular protrusion.

41. (New) The peri-arterial blood flow booster apparatus of claim 39, wherein the upstream portion and the downstream portion of the at least one balloon are in fluid communication.

42. (New) The peri-arterial blood flow booster apparatus of claim 39, wherein the upstream portion and the downstream portion of the at least one balloon are independently inflatable.

43. (New) A peri-arterial blood flow booster apparatus, comprising:

    a restrainer envelope having a length, an upstream end and a downstream end, and an interior surface defining an interior;

    at least one balloon comprising two or more compartments comprising an upstream compartment disposed in the interior of the upstream end of the restrainer envelope and a downstream compartment disposed in the interior of the downstream end of the restrainer envelope downstream of the upstream compartment, and independently inflatable from the upstream compartment,

    wherein the peri-arterial blood flow booster apparatus is configured sufficient such that upon actuation, inflation of the upstream compartment occurs prior to inflation of the downstream compartment thereby preventing blood backflow, and upon inflation of the downstream compartment blood is forced to flow downstream.

44. (New) The peri-arterial blood flow booster apparatus of claim 43, further comprising a protrusion fixedly disposed on the interior surface of the restrainer envelope at the upstream end, and in communication with the upstream compartment when the upstream compartment of the at least one balloon is inflated.

45. (New) The peri-arterial blood flow booster apparatus of claim 44, wherein the protrusion is an annular protrusion.

46 (New) A peri-arterial blood flow booster apparatus, comprising:

a restrainer envelope having an upstream end and a downstream end, and an interior surface defining an interior; and

at least two balloons, comprising an upstream balloon disposed in the interior of the upstream end of the restrainer envelope, and a downstream balloon disposed in the interior of the downstream end of the restrainer envelope downstream of the upstream balloon,

wherein the peri-arterial blood flow booster apparatus is configured sufficient such that upon actuation, inflation of the upstream balloon occurs prior to inflation of the downstream balloon thereby preventing blood backflow, and upon inflation of the downstream balloon blood is forced to flow downstream.

47. (New) The peri-arterial blood flow booster apparatus of claim 46, further comprising a protrusion fixedly disposed on the interior surface of the restrainer envelope at the upstream end, and in communication with the upstream balloon when the upstream balloon is inflated.

46. (New) The peri-arterial blood flow booster apparatus of claim 47, wherein the protrusion is an annular protrusion.

47. (New) The peri-arterial blood flow booster apparatus of claim 46, wherein the upstream balloon and the downstream balloon are in fluid communication.

48. (New) The peri-arterial blood flow booster apparatus of claim 46, wherein the upstream balloon and the downstream balloon are independently inflatable.

49. (New) A peri-arterial blood flow booster apparatus, comprising:

a restrainer envelope having an upstream end and a downstream end, and an interior surface defining an interior; and

at least two balloons, comprising an upstream balloon disposed in the interior of the upstream end of the restrainer envelope, and a downstream balloon disposed in the interior of the downstream end of the restrainer envelope downstream of the upstream balloon; and

a protrusion fixedly disposed on the interior surface of the restrainer envelope at the upstream end, and in communication with the upstream balloon when the upstream balloon is inflated.

50. (New) The peri-arterial blood flow booster apparatus of claim 49, wherein the protrusion is an annular protrusion.

51. (New) The peri-arterial blood flow booster apparatus of claim 49, wherein the upstream balloon and the downstream balloon are in fluid communication.

52. (New) The peri-arterial blood flow booster apparatus of claim 49, wherein the upstream balloon and the downstream balloon are independently inflatable.